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<110> BOHACH, GREGORY I.

<120> NON-TOXIC IMMUNE STIMULATING ENTEROTOXIN COMPOSITIONS

<130> 12136.1USWO

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<141> 2000-08-01

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<151> 1998-12-01

<150> 60/067,357

<151> 1997-12-02

<160> 66

<170> PatentIn Ver. 2.1

<210> 1

<211> 240

<212> PRT

<213> Staphylococcus aureus

<220>

<221> UNSURE

<222> (240)

<223> Xaa is unknown.

<400> 1

Glu Ser Gln Pro Asp Pro Thr Pro Asp Glu Leu His Lys Ala Ser Lys
1 5 10 15

Phe Thr Gly Leu Met Glu Asn Met Lys Val Leu Tyr Asp Asp His Tyr
20 25 30

Val Ser Ala Thr Lys Val Lys Ser Val Asp Lys Phe Leu Ala His Asp
35 40 45

Leu Ile Tyr Asn Ile Ser Asp Lys Lys Leu Lys Asn Tyr Asp Lys Val
50 55 60

Lys Thr Glu Leu Leu Asn Glu Gly Leu Ala Lys Lys Tyr Lys Asp Glu
65 70 75 80

Val Val Asp Val Tyr Gly Ser Asn Tyr Tyr Val Asn Cys Tyr Phe Ser
85 90 95

Ser Lys Asp Asn Val Gly Lys Val Thr Gly Gly Lys Thr Cys Met Tyr
100 105 110

Gly Gly Ile Thr Lys His Glu Gly Asn His Phe Asp Asn Gly Asn Leu
115 120 125

Gln Asn Val Leu Ile Arg Val Tyr Glu Asn Lys Arg Asn Thr Ile Ser
 130 135 140
 Phe Glu Val Gln Thr Asp Lys Lys Ser Val Thr Ala Gln Glu Leu Asp
 145 150 155 160
 Ile Lys Ala Arg Asn Phe Leu Ile Asn Lys Lys Asn Leu Tyr Glu Phe
 165 170 175
 Asn Ser Ser Pro Tyr Glu Thr Gly Tyr Ile Lys Phe Ile Glu Asn Asn
 180 185 190
 Gly Asn Thr Phe Trp Tyr Asp Met Met Pro Ala Pro Gly Asp Lys Phe
 195 200 205
 Asp Gln Ser Lys Tyr Leu Met Met Tyr Asn Asp Asn Lys Thr Val Asp
 210 215 220
 Ser Lys Ser Val Lys Ile Glu Val His Leu Thr Thr Lys Asn Gly Xaa
 225 230 235 240

<210> 2
 <211> 240
 <212> PRT
 <213> Staphylococcus aureus

<220>
 <221> UNSURE
 <222> (240)
 <223> Xaa is unknown.

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 1 5 10 15
 Phe Thr Gly Thr Met Gly Asn Met Lys Tyr Leu Tyr Asp Asp His Tyr
 20 25 30
 Val Ser Ala Thr Lys Val Met Ser Val Asp Lys Phe Leu Ala His Asp
 35 40 45
 Leu Ile Tyr Asn Ile Ser Asp Lys Lys Leu Lys Asn Tyr Asp Lys Val
 50 55 60
 Lys Thr Glu Leu Leu Asn Glu Asp Leu Ala Lys Lys Tyr Lys Asp Glu
 65 70 75 80
 Val Val Asp Val Tyr Gly Ser Asn Tyr Tyr Val Asn Cys Tyr Phe Ser
 85 90 95

Ser Lys Asp Asn Val Gly Lys Val Thr Gly Gly Lys Thr Cys Met Tyr
 100 105 110
 Gly Gly Ile Thr Lys His Glu Gly Asn His Phe Asp Asn Gly Asn Leu
 115 120 125
 Gln Asn Val Leu Ile Arg Val Tyr Glu Asn Lys Arg Asn Thr Ile Ser
 130 135 140
 Phe Glu Val Gln Thr Asp Lys Lys Ser Val Thr Ala Gln Glu Leu Asp
 145 150 155 160
 Ile Lys Ala Arg Asn Phe Leu Ile Asn Lys Lys Asn Leu Tyr Glu Phe
 165 170 175
 Asn Ser Ser Pro Tyr Glu Thr Gly Tyr Ile Lys Phe Ile Glu Asn Asn
 180 185 190
 Gly Asn Thr Phe Gln Tyr Asp Met Met Pro Ala Pro Gly Asp Lys Phe
 195 200 205
 Asp Gln Ser Lys Tyr Leu Met Met Tyr Asn Asp Asn Lys Thr Val Asp
 210 215 220
 Ser Lys Ser Val Lys Ile Glu Val His Leu Thr Thr Lys Asn Gly Xaa
 225 230 235 240

<210> 3
 <211> 240
 <212> PRT
 <213> Staphylococcus aureus

<220>
 <221> UNSURE
 <222> (240)
 <223> Xaa is unknown.

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 1 5 10 15
 Phe Thr Gly Thr Met Gly Asn Met Lys Tyr Leu Tyr Asp Asp His Tyr
 20 25 30
 Val Ser Ala Thr Lys Val Lys Ser Val Asp Lys Phe Leu Ala His Asp
 35 40 45
 Leu Ile Tyr Asn Ile Ser Asp Lys Lys Leu Lys Asn Tyr Asp Lys Val
 50 55 60
 Lys Thr Glu Leu Leu Asn Glu Asp Leu Ala Lys Lys Tyr Lys Asp Glu

65		70		75		80
Val Val Asp Val Tyr Gly Ser Asn Tyr Tyr Val Asn Cys Tyr Phe Ser						
		85		90		95
Ser Lys Asp Asn Val Gly Lys Val Thr Gly Gly Lys Thr Cys Met Tyr						
		100		105		110
Gly Gly Ile Thr Lys His Glu Gly Asn His Phe Asp Asn Gly Asn Leu						
		115		120		125
Gln Asn Val Leu Val Arg Val Tyr Glu Asn Lys Arg Asn Thr Ile Ser						
		130		135		140
Phe Glu Val Gln Thr Asp Lys Lys Ser Val Thr Ala Gln Glu Leu Asp						
		145		150		155
Ile Lys Ala Arg Asn Phe Leu Ile Asn Lys Lys Asn Leu Tyr Glu Phe						
		165		170		175
Asn Ser Ser Pro Tyr Glu Thr Gly Tyr Ile Lys Phe Ile Glu Asn Asn						
		180		185		190
Gly Asn Thr Phe Gln Tyr Asp Met Met Pro Ala Pro Gly Asp Lys Phe						
		195		200		205
Asp Gln Ser Lys Tyr Leu Met Met Tyr Asn Asp Asn Lys Thr Val Asp						
		210		215		220
Ser Lys Ser Val Lys Ile Glu Val His Leu Thr Thr Lys Asn Gly Xaa						
		225		230		235
						240

<210> 4
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 <212> PRT
 <213> Staphylococcus aureus

<220>
 <221> UNSURE
 <222> (240)
 <223> Xaa is unknown.

<400> 4
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1 5 10 15
Phe Thr Gly Thr Met Gly Asn Met Lys Tyr Leu Tyr Asp Asp His Tyr
20 25 30
Val Ser Ala Thr Lys Val Lys Ser Val Asp Lys Phe Leu Ala His Asp
35 40 45

Leu Ile Tyr Asn Ile Asn Asp Lys Lys Leu Asn Asn Tyr Asp Lys Val
 50 55 60
 Lys Thr Glu Leu Leu Asn Glu Asp Leu Ala Asn Lys Tyr Lys Asp Glu
 65 70 75 80
 Val Val Asp Val Tyr Gly Ser Asn Tyr Tyr Val Asn Cys Tyr Phe Ser
 85 90 95
 Ser Lys Asp Asn Val Gly Lys Val Thr Ser Gly Lys Thr Cys Met Tyr
 100 105 110
 Gly Gly Ile Thr Lys His Glu Gly Asn His Phe Asp Asn Gly Asn Leu
 115 120 125
 Gln Asn Val Leu Ile Arg Val Tyr Glu Asn Lys Arg Asn Thr Ile Ser
 130 135 140
 Phe Glu Val Gln Thr Asp Lys Lys Ser Val Thr Ala Gln Glu Leu Asp
 145 150 155 160
 Ile Lys Ala Arg Asn Phe Leu Ile Asn Lys Lys Asn Leu Tyr Glu Phe
 165 170 175
 Asn Ser Ser Pro Tyr Glu Thr Gly Tyr Ile Lys Phe Ile Glu Ser Asn
 180 185 190
 Gly Asn Thr Phe Trp Tyr Asp Met Met Pro Ala Pro Gly Asp Lys Phe
 195 200 205
 Asp Gln Ser Lys Tyr Leu Met Ile Tyr Lys Asp Asn Lys Met Val Asp
 210 215 220
 Ser Lys Ser Val Lys Ile Glu Val His Leu Thr Thr Lys Asn Gly Xaa
 225 230 235 240

<210> 5
 <211> 240
 <212> PRT
 <213> Staphylococcus aureus

<220>
 <221> UNSURE
 <222> (240)
 <223> Xaa is unknown.

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 1 5 10 15

Phe Thr Gly Thr Met Gly Asn Met Lys Tyr Leu Tyr Asp Asp His Tyr
20 25 30
Val Ser Ala Thr Lys Val Lys Ser Val Asp Lys Phe Leu Ala His Asp
35 40 45
Leu Ile Tyr Asn Ile Ser Asp Lys Lys Leu Lys Asn Tyr Asp Lys Val
50 55 60
Lys Thr Glu Leu Leu Asn Glu Asp Leu Ala Lys Lys Tyr Lys Asp Glu
65 70 75 80
Val Val Asp Val Tyr Gly Ser Asn Tyr Tyr Val Asn Cys Tyr Phe Ser
85 90 95
Ser Lys Asp Asn Val Gly Lys Val Thr Gly Gly Lys Thr Cys Met Tyr
100 105 110
Gly Gly Ile Thr Lys His Glu Gly Asn His Phe Asp Asn Gly Asn Leu
115 120 125
Gln Asn Val Leu Ile Arg Val Tyr Glu Asn Lys Arg Asn Thr Ile Ser
130 135 140
Phe Glu Val Gln Thr Asp Lys Lys Ser Val Thr Ala Gln Glu Leu Asp
145 150 155 160
Ile Lys Ala Arg Asn Phe Leu Ile Asn Lys Lys Asn Leu Tyr Glu Phe
165 170 175
Asn Ser Ser Pro Tyr Glu Thr Gly Tyr Ile Lys Phe Ile Glu Asn Asn
180 185 190
Gly Asn Thr Phe Gln Tyr Asp Met Met Pro Ala Pro Gly Asp Lys Phe
195 200 205
Asp Gln Ser Lys Tyr Leu Met Met Tyr Asn Asp Asn Lys Thr Val Asp
210 215 220
Ser Lys Arg Val Lys Ile Glu Val His Leu Thr Thr Lys Asn Gly Xaa
225 230 235 240

<210> 6
<211> 240
<212> PRT
<213> Staphylococcus aureus
<220>
<221> UNSURE
<222> (240)
<223> Xaa is unknown.

<400> 6

Glu Ser Gln Pro Asp Pro Met Pro Asp Asp Leu His Lys Ser Ser Glu
1 5 10 15

Phe Thr Gly Thr Met Gly Asn Met Lys Tyr Leu Tyr Asp Asp His Tyr
20 25 30

Val Ser Ala Thr Lys Val Lys Ser Val Asp Lys Phe Leu Ala His Asp
35 40 45

Leu Ile Tyr Asn Ile Ser Asp Lys Arg Leu Lys Asn Tyr Asp Lys Val
50 55 60

Lys Thr Glu Leu Leu Asn Glu Asp Leu Ala Lys Lys Tyr Lys Asp Glu
65 70 75 80

Val Val Asp Val Tyr Gly Ser Asn Tyr Tyr Val Asn Cys Tyr Phe Ser
85 90 95

Ser Lys Asp Asn Val Gly Lys Val Thr Gly Gly Lys Thr Cys Met Tyr
100 105 110

Gly Gly Ile Thr Lys His Glu Gly Asn His Phe Asp Asn Gly Asn Leu
115 120 125

Gln Asn Val Leu Val Arg Val Tyr Glu Asn Lys Arg Asn Thr Ile Ser
130 135 140

Phe Glu Val Gln Thr Asp Lys Lys Ser Val Thr Ala Gln Glu Leu Asp
145 150 155 160

Ile Lys Ala Arg Asn Phe Leu Ile Asn Lys Lys Asn Leu Tyr Glu Phe
165 170 175

Asn Ser Ser Pro Tyr Glu Thr Gly Tyr Ile Lys Phe Ile Glu Asn Asn
180 185 190

Gly Asn Thr Phe Gln Tyr Asp Met Met Pro Ala Pro Gly Asp Lys Phe
195 200 205

Asp Gln Ser Lys Tyr Leu Met Met Tyr Asn Asp Asn Lys Thr Val Asp
210 215 220

Ser Lys Arg Val Lys Ile Glu Val His Leu Thr Thr Lys Asn Gly Xaa
225 230 235 240

<210> 7

<211> 240

<212> PRT

<213> Staphylococcus aureus

<220>

<221> UNSURE

<222> (240)

<223> Xaa is unknown.

<400> 7

Glu Ser Gln Pro Asp Pro Thr Pro Asp Glu Leu His Lys Ala Ser Lys
1 5 10 15

Phe Thr Gly Leu Met Glu Asn Met Lys Val Leu Tyr Asp Asp Arg Tyr
20 25 30

Val Ser Ala Thr Lys Val Lys Ser Val Asp Lys Phe Leu Ala His Asp
35 40 45

Leu Ile Tyr Asn Ile Ser Asp Lys Lys Leu Lys Asn Tyr Asp Lys Val
50 55 60

Lys Thr Glu Leu Leu Asn Glu Asp Leu Ala Lys Lys Tyr Lys Asp Glu
65 70 75 80

Val Val Asp Val Tyr Gly Ser Asn Tyr Tyr Val Asn Cys Tyr Phe Phe
85 90 95

Ser Lys Asp Asn Val Gly Lys Val Thr Gly Gly Lys Thr Cys Met Tyr
100 105 110

Gly Gly Ile Thr Lys His Glu Gly Asn His Phe Asp Asn Gly Asn Leu
115 120 125

Gln Asn Val Leu Ile Arg Val Tyr Glu Asn Lys Arg Asn Thr Ile Ser
130 135 140

Phe Glu Val Gln Thr Asp Lys Lys Ser Val Thr Ala Gln Glu Leu Asp
145 150 155 160

Ile Lys Ala Arg Asn Phe Leu Ile Asn Lys Lys Asn Leu Tyr Glu Phe
165 170 175

Asn Ser Ser Pro Tyr Glu Thr Gly Tyr Ile Lys Phe Ile Glu Asn Asn
180 185 190

Gly Asn Thr Phe Gln Tyr Asp Met Met Pro Ala Pro Gly Asp Lys Phe
195 200 205

Asp Gln Ser Lys Tyr Leu Met Met Tyr Asn Asp Asn Lys Thr Val Asp
210 215 220

Ser Lys Arg Val Lys Ile Glu Val His Leu Thr Thr Lys Asn Gly Xaa
225 230 235 240

<210> 8
 <211> 240
 <212> PRT
 <213> Staphylococcus aureus

<220>
 <221> UNSURE
 <222> (240)
 <223> Xaa is unknown.

<400> 8
 Glu Ser Gln Pro Asp Pro Thr Pro Asp Glu Leu His Lys Ala Ser Lys
 1 5 10 15
 Phe Thr Gly Leu Met Glu Asn Met Lys Val Leu Tyr Asp Asp Arg Tyr
 20 25 30
 Val Ser Ala Thr Lys Val Lys Ser Val Asp Lys Phe Leu Ala His Asp
 35 40 45
 Leu Ile Tyr Asn Ile Ser Asp Lys Lys Leu Lys Asn Tyr Asp Lys Val
 50 55 60
 Lys Thr Glu Leu Leu Asn Glu Asp Leu Ala Lys Lys Tyr Lys Asp Glu
 65 70 75 80
 Val Val Asp Val Tyr Gly Ser Asn Tyr Tyr Val Asn Cys Cys Phe Phe
 85 90 95
 Ser Lys Asp Asn Val Gly Lys Val Thr Gly Gly Lys Thr Cys Met Tyr
 100 105 110
 Gly Gly Ile Thr Lys His Glu Gly Asn His Phe Asp Asn Gly Asn Leu
 115 120 125
 Gln Asn Val Leu Ile Arg Val Tyr Glu Asn Lys Arg Asn Thr Ile Ser
 130 135 140
 Phe Glu Val Gln Thr Asp Lys Lys Ser Val Thr Ala Gln Glu Leu Asp
 145 150 155 160
 Ile Lys Ala Arg Asn Phe Leu Ile Asn Lys Lys Asn Leu Tyr Glu Phe
 165 170 175
 Asn Ser Ser Pro Tyr Glu Thr Gly Tyr Ile Lys Phe Ile Glu Asn Asn
 180 185 190
 Gly Asn Thr Phe Gln Tyr Asp Met Met Pro Ala Pro Gly Asp Lys Phe
 195 200 205
 Asp Gln Ser Lys Tyr Leu Met Met Tyr Asn Asp Asn Lys Thr Val Asp
 210 215 220
 Ser Lys Arg Val Lys Ile Glu Val His Leu Thr Thr Lys Asn Gly Xaa

225

230

235

240

<210> 9

<211> 11

<212> PRT

<213> Staphylococcus aureus

<400> 9

Cys Ala Gly Gly Thr Pro Asn Lys Thr Ala Cys

1

5

10

<210> 10

<211> 21

<212> PRT

<213> Staphylococcus aureus

<400> 10

Cys Tyr Phe Ser Lys Lys Thr Asn Asp Ile Asn Ser His Gln Thr Pro

1

5

10

15

Lys Arg Lys Thr Cys

20

<210> 11

<211> 18

<212> PRT

<213> Staphylococcus aureus

<400> 11

Cys Tyr Phe Ser Ser Lys Asp Asn Val Gly Lys Val Thr Gly Gly Lys

1

5

10

15

Thr Cys

<210> 12

<211> 18

<212> PRT

<213> Staphylococcus aureus

<400> 12

Cys Tyr Phe Ser Ser Lys Asp Asn Val Gly Lys Val Thr Gly Gly Lys

1

5

10

15

Thr Cys

<210> 13
<211> 18
<212> PRT
<213> Staphylococcus aureus

<400> 13
Cys Tyr Phe Ser Ser Lys Asp Asn Val Gly Lys Val Thr Gly Gly Lys
1 5 10 15

Thr Cys

<210> 14
<211> 18
<212> PRT
<213> Staphylococcus aureus

<400> 14
Cys Tyr Phe Ser Ser Lys Asp Asn Val Gly Lys Val Thr Ser Gly Lys
1 5 10 15

Thr Cys

<210> 15
<211> 18
<212> PRT
<213> Staphylococcus aureus

<400> 15
Cys Tyr Phe Ser Ser Lys Asp Asn Val Gly Lys Val Thr Gly Gly Lys
1 5 10 15

Thr Cys

<210> 16
<211> 18
<212> PRT
<213> Staphylococcus aureus

<400> 16
Cys Tyr Phe Ser Ser Lys Asp Asn Val Gly Lys Val Thr Gly Gly Lys
1 5 10 15

Thr Cys

<210> 17
<211> 18
<212> PRT

<213> Staphylococcus aureus

<400> 17

Cys Cys Phe Ser Ser Lys Asp Asn Val Gly Lys Val Thr Gly Gly Lys
1 5 10 15

Thr Cys

<210> 18

<211> 11

<212> PRT

<213> Staphylococcus aureus

<400> 18

Lys Tyr Lys Gly Lys Lys Val Asp Leu Tyr Gly
1 5 10

<210> 19

<211> 11

<212> PRT

<213> Staphylococcus aureus

<400> 19

Lys Tyr Lys Asp Lys Tyr Val Asp Val Phe Gly
1 5 10

<210> 20

<211> 11

<212> PRT

<213> Staphylococcus aureus

<400> 20

Lys Tyr Lys Asp Glu Val Val Asp Val Tyr Gly
1 5 10

<210> 21

<211> 11

<212> PRT

<213> Staphylococcus aureus

<400> 21

Lys Tyr Lys Asp Glu Val Val Asp Val Tyr Gly
1 5 10

<210> 22

<211> 11

<212> PRT

<213> Staphylococcus aureus

<400> 22
Lys Tyr Lys Asp Glu Val Val Asp Val Tyr Gly
1 5 10

<210> 23
<211> 11
<212> PRT
<213> Staphylococcus aureus

<400> 23
His Phe Lys Ser Lys Asn Val Asp Val Tyr Pro
1 5 10

<210> 24
<211> 11
<212> PRT
<213> Staphylococcus aureus

<400> 24
Lys Tyr Lys Gly Lys Lys Val Asp Leu Tyr Gly
1 5 10

<210> 25
<211> 11
<212> PRT
<213> Streptococcus pyrogenes

<400> 25
Leu Phe Lys Asp Lys Asn Val Asp Ile Tyr Gly
1 5 10

<210> 26
<211> 11
<212> PRT
<213> Streptococcus pyrogenes

<400> 26
Phe Lys Arg Asp Asp His Val Asp Val Phe Gly
1 5 10

<210> 27
<211> 11
<212> PRT
<213> Staphylococcus aureus

<400> 27
Phe Thr Lys Gly Glu Lys Val Asp Leu Asn Thr
1 5 10

<210> 28
<211> 17
<212> PRT
<213> Staphylococcus aureus

<400> 28
Lys Lys Asn Val Thr Val Gln Glu Leu Asp Leu Gln Ala Arg Arg Tyr
1 5 10 15
Leu

<210> 29
<211> 17
<212> PRT
<213> Staphylococcus aureus

<400> 29
Lys Lys Lys Val Thr Ala Gln Glu Leu Asp Tyr Leu Thr Arg His Tyr
1 5 10 15
Leu

<210> 30
<211> 17
<212> PRT
<213> Staphylococcus aureus

<400> 30
Lys Lys Ser Val Thr Ala Gln Glu Leu Asp Ile Lys Ala Arg Asn Phe
1 5 10 15
Leu

<210> 31
<211> 17
<212> PRT
<213> Staphylococcus aureus

<400> 31
Lys Lys Ser Val Thr Ala Gln Glu Leu Asp Ile Lys Ala Arg Asn Phe
1 5 10 15
Leu

<210> 32
<211> 17
<212> PRT

<213> Staphylococcus aureus

<400> 32

Lys Lys Ser Val Thr Ala Gln Glu Leu Asp Ile Lys Ala Arg Asn Phe
1 5 10 15

Leu

<210> 33

<211> 17

<212> PRT

<213> Staphylococcus aureus

<400> 33

Lys Lys Asn Val Thr Val Gln Glu Leu Asp Ala Gln Ala Arg Arg Tyr
1 5 10 15

Leu

<210> 34

<211> 17

<212> PRT

<213> Staphylococcus aureus

<400> 34

Lys Lys Glu Val Thr Val Gln Glu Leu Asp Leu Gln Ala Arg His Tyr
1 5 10 15

Leu

<210> 35

<211> 17

<212> PRT

<213> Streptococcus pyrogenes

<400> 35

Lys Lys Met Val Thr Ala Gln Glu Leu Asp Tyr Lys Val Arg Lys Tyr
1 5 10 15

Leu

<210> 36

<211> 17

<212> PRT

<213> Streptococcus pyrogenes

<400> 36

Lys Asp Ile Val Thr Phe Gln Glu Ile Asp Phe Lys Ile Arg Lys Tyr
1 5 10 15

Leu

<210> 37
<211> 5
<212> PRT
<213> Staphylococcus aureus

<400> 37
Lys Lys Gln Leu Ile
1 5

<210> 38
<211> 9
<212> PRT
<213> Staphylococcus aureus

<400> 38
Leu Asp Phe Glu Ile Arg His Gln Leu
1 5

<210> 39
<211> 12
<212> PRT
<213> Staphylococcus aureus

<400> 39
Cys Met Tyr Gly Gly Val Ile Leu His Asp Asn Asn
1 5 10

<210> 40
<211> 12
<212> PRT
<213> Staphylococcus aureus

<400> 40
Cys Met Tyr Gly Gly Val Thr Glu His Asn Gly Asn
1 5 10

<210> 41
<211> 12
<212> PRT
<213> Staphylococcus aureus

<400> 41
Cys Met Tyr Gly Gly Ile Thr Lys His Glu Gly Asn
1 5 10

<210> 42
<211> 12
<212> PRT
<213> Staphylococcus aureus

<400> 42
Cys Met Tyr Gly Gly Ile Thr Lys His Glu Gly Asn
1 5 10

<210> 43
<211> 12
<212> PRT
<213> Staphylococcus aureus

<400> 43
Cys Met Tyr Gly Gly Ile Thr Lys His Glu Gly Asn
1 5 10

<210> 44
<211> 12
<212> PRT
<213> Staphylococcus aureus

<400> 44
Cys Thr Tyr Gly Gly Val Thr Pro His Glu Gly Asn
1 5 10

<210> 45
<211> 12
<212> PRT
<213> Staphylococcus aureus

<400> 45
Cys Met Tyr Gly Gly Val Thr Leu His Asp Asn Asn
1 5 10

<210> 46
<211> 12
<212> PRT
<213> Streptococcus pyogenes

<400> 46
Cys Ile Tyr Gly Gly Val Thr Asn His Glu Gly Asn
1 5 10

<210> 47
<211> 12
<212> PRT

<213> Streptococcus pyrogenes

<400> 47

Tyr Ile Tyr Gly Gly Ile Thr Pro Ala Gln Asn Asn
1 5 10

<210> 48

<211> 12

<212> PRT

<213> Staphylococcus aureus

<400> 48

Phe Gln Ile Ser Gly Val Thr Asn Thr Glu Lys Leu
1 5 10

<210> 49

<211> 14

<212> PRT

<213> Staphylococcus aureus

<400> 49

Leu Leu Arg Ile Tyr Arg Asp Asn Lys Thr Ile Asn Ser Glu
1 5 10

<210> 50

<211> 14

<212> PRT

<213> Staphylococcus aureus

<400> 50

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1 5 10

<210> 51

<211> 14

<212> PRT

<213> Staphylococcus aureus

<400> 51

Tyr Leu Met Met Tyr Asn Asp Asn Lys Thr Val Asp Ser Lys
1 5 10

<210> 52

<211> 14

<212> PRT

<213> Staphylococcus aureus

<400> 52

Tyr Leu Met Met Tyr Asn Asp Asn Lys Thr Val Asp Ser Lys
1 5 10

<210> 53
<211> 14
<212> PRT
<213> Staphylococcus aureus

<400> 53
Tyr Leu Met Ile Tyr Lys Asp Asn Lys Met Val Asp Ser Lys
1 5 10

<210> 54
<211> 14
<212> PRT
<213> Staphylococcus aureus

<400> 54
Gln Leu Arg Ile Tyr Ser Asp Asn Lys Thr Leu Ser Thr Glu
1 5 10

<210> 55
<211> 14
<212> PRT
<213> Staphylococcus aureus

<400> 55
Leu Leu Arg Ile Tyr Arg Asp Asn Lys Thr Ile Asn Ser Glu
1 5 10

<210> 56
<211> 14
<212> PRT
<213> Streptococcus pyrogenes

<400> 56
Tyr Leu Met Ile Tyr Lys Asp Met Glu Thr Leu Asp Ser Asn
1 5 10

<210> 57
<211> 14
<212> PRT
<213> Streptococcus pyrogenes

<400> 57
Ile Phe Ala Lys Tyr Lys Asp Asn Arg Ile Ile Asn Met Lys
1 5 10

<210> 58
<211> 14
<212> PRT

<213> Staphylococcus aureus

<400> 58

Pro Pro Ile Asn Ile Asp Glu Ile Lys Thr Ile Glu Ala Glu
1 5 10

<210> 59

<211> 54

<212> DNA

<213> Staphylococcus aureus

<400> 59

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<210> 60

<211> 18

<212> PRT

<213> Staphylococcus aureus

<400> 60

Cys Tyr Phe Ser Ser Lys Asp Asn Val Gly Lys Val Thr Gly Gly Lys
1 5 10 15

Thr Cys

<210> 61

<211> 42

<212> DNA

<213> Synthetic

<400> 61

tgctattttt catccaaaga taatgcaggt ggcaaaactt gt 42

<210> 62

<211> 14

<212> PRT

<213> Synthetic

<400> 62

Cys Tyr Phe Ser Ser Lys Asp Asn Ala Gly Gly Lys Thr Cys
1 5 10

<210> 63

<211> 27

<212> DNA

<213> Synthetic

<400> 63

tgctattttt catccggcaa aacttgt 27

<210> 64
<211> 9
<212> PRT
<213> Synthetic

<400> 64
Cys Tyr Phe Ser Ser Gly Lys Thr Cys
1 5

<210> 65
<211> 18
<212> DNA
<213> Synthetic

<400> 65
tgctgtggca aaacttgt

18

<210> 66
<211> 6
<212> PRT
<213> Synthetic

<400> 66
Cys Cys Gly Lys Thr Cys
1 5